US 20100005550A1

(19) **United States**

(12) **Patent Application Publication**

Deng et al.

(10) **Pub. No.: US 2010/0005550 A1**

(43) **Pub. Date: Jan. 7, 2010**

(54) **NUCLEIC ACID SEQUENCES FROM CHLORELLA SAROKINIANA AND USES THEREOF**

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(21) Appl. No.: **12/368,174**

(22) Filed: **Feb. 9, 2009**

Related U.S. Application Data

(63) Continuation of application No. 09/920,953, filed on Aug. 2, 2001, now abandoned.

(60) Provisional application No. 60/224,389, filed on Aug. 9, 2000.

Publication Classification

(51) **Int. Cl.**
A01H 5/00 (2006.01)
C12N 15/11 (2006.01)

(52) **U.S. Cl.** **800/298**; 536/23.7

(57) **ABSTRACT**

Expressed Sequence Tags (ESTs) isolated from the unicellular green algae, *Chlorella sarokiniana*, are disclosed. The invention encompasses nucleic acid molecules that encode *Chlorella* protein homologs and fragments thereof. In addition, antibodies capable of binding the proteins are encompassed by the present invention. The disclosed ESTs have particular utility in isolating genes and promoters, identifying and mapping the genes involved in developmental and metabolic pathways, and determining gene function. The ESTs provide a unique molecular tool for the targeting and isolation of novel genes for plant protection and improvement. The invention also relates to methods of using the disclosed nucleic acid molecules, proteins, fragments of proteins, and antibodies, for example, for gene identification and analysis, and preparation of constructs.